CLAIMS:

1. A method of processing images belonging to a sequence of at least two images having a surface representing an organ or a part of an organ which is deformable over time and referred to as the organ surface, said surface including characteristic points, denoted marked points, which correspond to each other from one image to another in the sequence, said method comprising steps of:

- calculating positions of the marked points on at least two images, successive or not,
- determining parameters of an explicit mathematical expression of the deformation of the organ or part of the organ observed between the two images from positions in a set of marked points on the two images, said set of marked points containing the marked points present on the surface of the organ or at least the marked points present on part of the surface of the organ.

2. An image processing method as claimed in Claim 1, characterized in that said organ is marked by magnetic resonance spatial modulation, said marking being visible on the images in the form of marking lines, said marking lines deforming whilst following the deformation of the organ and being such that there exist points of intersection between said marking lines, said points of intersection being the marked points.

3. An image processing method as claimed in one of Claims 1 and 2, characterized in that the expression of the deformation is defined in the complex plane.

4. An image processing method as claimed in Claim 3, characterized in that said mathematical expression of the deformation is of the form

$$f(z) = |z-o| \underbrace{\left(\sum_{\substack{k=-N \\ k\neq 0}}^{N} a_k e^{ik\theta} \right)}_{f_o(\theta)} + d \quad , \quad \theta = arg(z-o), \quad (a_k) \in C^{2N+1}$$

5. An image processing method as claimed in one of Claims 3 and 4, characterized in that a corrective term which is a function of the radius and of the polar angle is introduced into the mathematical expression of the deformation, said corrective term including parameters determined a posteriori from the determination of the first mathematical expression from a set of marked points on the two images.

6. An image processing apparatus having means for receiving or generating images, said images belonging to a sequence of at least two images having a surface representing an organ or a part of an organ which is deformable over time and referred to as the organ surface, said surface including characteristic points, denoted marked points, which correspond to each other from one image to another in the sequence, said equipment comprising means for:

- calculating positions of the marked points on at least two images, successive or not,
- determining parameters of an explicit mathematical expression of the deformation of the organ or part of the organ observed between the two images from positions in a set of marked points on the two images, said set of marked points containing the marked points present on the surface of the organ or at least the marked points present on part of the surface of the organ.

7. An image processing apparatus as claimed in Claim 6, characterized in that said organ is marked by magnetic resonance spatial modulation, said marking being visible on the images in the form of marking lines, said marking lines deforming whilst following the deformation of the organ and being such that there exist points of intersection between said marking lines, said points of intersection being the marked points.

8. An image processing apparatus as claimed in Claim 7, for implementing a method as claimed in one of Claims 3 to 5.

9. An image processing apparatus as claimed in one of Claims 7 and 8, comprising means for iterating the method described for two images, successive or not, in Claim 1, on all the successive images in the image sequence.

10. An image processing apparatus as claimed in Claim 9, comprising means for extracting the parameters of the mathematical expression of the deformation corresponding to

rigid deformations and means for visualizing the changes in these parameters during the sequence.

11. An image processing apparatus as claimed in one of Claims 7 to 10, comprising means for defining a structure per unit length, means for applying the mathematical expression of the deformation to said structure per unit length and means for visualizing the deformation undergone by said structure per unit length.

12. An image processing apparatus as claimed in Claim 11, characterized in that said structure per unit length is a circle and in that the means for applying the mathematical expression of the deformation to said structure per unit length apply only the dependent part of the polar angle to the circle.

13. An image processing apparatus as claimed in Claim 11, characterized in that said structure per unit length is any structure per unit length defined on one of the images of the sequence and in that the deformation is followed over all the successive images of the sequence using means for applying the mathematical expression of the deformation to said structure per unit length applying, at each point on the structure per unit length, the mathematical expression of the deformation valid at this point.

14. An image capture and processing apparatus, said apparatus comprising means for acquiring a sequence of at least two images representing a representative surface of an organ or a part of an organ which is deformable over time and referred to as the organ surface, said surface including characteristic points, denoted marked points, which correspond to each other from one image to another in the sequence, means for visual representation of these images, an image processing apparatus as claimed in one of Claims 7 to 13.